DOCUMENT RESUME

ED 026 419 UD 007 671

By-Unikel, Irving P.; And Others

Learning of Culturally Disadvantaged Children as a Function of Social and Tangible Reward.

Pub Date Sep 68

Note-9p.; Paper presented at the meeting of the American Psychological Association, (San Francisco, Calif., September 1968).

EDRS Price MF-$0.25 HC-$0.55

Descriptors-Control Groups, *Disadvantaged Youth, Experimental Groups, *Experiments, *Learning, *Preschool Children, *Rewards, Sex Differences, Socioeconomic Status

Identifiers-Georgia, Project Head Start

The experiment studied the "relative effectiveness of tangible and social rewards upon the performance of a simple discrimination learning task by culturally disadvantaged children." Also assessed were the effects of the sex of the subjects (Ss) and the examiner. Ss were 144 five- and six-year old youngsters in a Georgia Head Start program. No differential effects of the two types of rewards were found nor was there a significant interaction of sex as a variable. Among the conclusions is the statement that these results question "the applicability of a general concept of cultural disadvantage as a function of lower socioeconomic status." (NH)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

07671 E

ED026419

PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Learning of Culturally Disadvantaged Children as a Function of Social and Tangible Reward[1]

Irving P. Unikel, Henry E. Adams, and G.S. Strain
University of Georgia

Previous work has indicated that a comprehensive assessment of the influence upon learning of differences in the motivational systems of culturally disadvantaged children must be preceded by a determination of the significance of different types of rewards for these children. Reward effectiveness must also be determined for normal and retarded individuals, as Zigler (1962) has indicated, if meaningful comparisons are to be made.

Terrell, Durkin, and Wiesley (1959) found that lower socioeconomic class children evidenced superior performance on a discrimination learning task in a tangible as opposed to an intangible reinforcement condition, while middle class children did better when an intangible rather than a tangible reinforcer was employed. Similar results were obtained by Zigler and de Labry (1962) for a concept-switching task. Using a simple performance task, however, Noonan and Barry (1967) found

---

[1]Paper presented at the meeting of the American Psychological Association, San Francisco, September, 1968.

The authors wish to thank the Georgia Mountains Planning and Development Commission, especially the personnel of the Project Head Start program, for assistance which made this research possible.

UD 007 671

that a non-retarded--middle-class[2]--group of Ss performed significantly longer under tangible than under social (intangible) reinforcement conditions.

The present experiment sought to determine the relative effectiveness of tangible and social rewards upon the performance of a simple discrimination learning task by culturally disadvantaged children. The effects of sex of S and sex of E were also assessed.

Method

Subjects

The Ss were 144 five- and six-year old children enrolled in Project Head Start in North Georgia. Half were males and half were females. Only children who met the established criteria for Head Start eligibility (Office of Economic Opportunity, 1965) were utilized in the experiment.

Procedure

The Ss were separated into twelve groups of twelve Ss each. Four groups received tangible reward (candy), four received social reward (e.g., "good"), and four served as no-reward control groups. The four groups in each of the above reward conditions represented combinations of male and female Ss with male and female Es respectively. Group assignment with respect to reward condition and sex of E was randomly determined.

All Ss received comparable experience with a marble-in-the-hole game apparatus with two holes, left and right. They

---

[2]J.R. Noonan, personal communication, 1968.

were initially instructed to drop a marble into either hole each time it was returned to them. Following a 2-minute period during which an operant level was established for each S, the experimental groups received the appropriate reward, tangible or social, each time a marble was dropped into the hole which had been least preferred during the operant period. After this second--6 minute--conditioning period, reward was terminated and the experimental Ss performed for 3 minutes under extinction conditions. The control groups received no reward throughout the 11-minute session.

Results

The percentages of correct responses during the 2-minute operant period and the final 2 minutes of the conditioning and extinction periods were computed. These data were adjusted for the (minimal) operant differences between groups by use of the differences between the operant means. The resulting adjusted data were then submitted to an analysis of variance, summarized in Table 1.

The principal results of the experiment are illustrated in Fig. 1. Inspection of Fig. 1 and Table 1 reveals a significant interaction between reward and treatments indicating: (a) that the introduction of both tangible and social reward significantly facilitated performance on the learning task and resistance to extinction as compared with the no-reward control condition, and (b) that tangible and social reward appeared to be equally effective. No significant main

effect of sex of S, nor any significant interaction of this variable with any of the other experimental variables was evidenced. However, while no significant interactions involving sex of E were indicated, the Ss generally performed significantly better when the E was female ($\bar{x}$ =50.34) rather than male ($\bar{x}$ = 44.86).

Discussion

The experimental findings indicate no differential effectiveness of the two types of rewards employed, social and tangible, and hence are discrepant from the previous results cited. It must be noted that the earlier work involved the performance or correctness type of social reward rather than the person or praise type used in the present experiment, but the literature indicates lack of support for the hypothesis of an interaction between socioeconomic class and type of social reward (Peterson, 1967). The different experiments also used dissimilar criteria to determine socioeconomic class. Terrell et al (1959) used Warner's Index of Status Characteristics, Zigler and de Labry (1962) used the revised scale for rating occupation in Warner's Index, and the present study used the primarily economic criteria of Project Head Start (Office of Economic Opportunity, 1965). Different criteria for defining socioeconomic class may obviously lead to different results, and the variables which enter into such definitions must be isolated and systematically explored.

The assumptions underlying established criteria for assessing cultural disadvantage, such as those used by Pro-

ject Head Start, cannot be accepted without investigation. This is the second study by the authors which employed the Head Start criteria and failed to find the expected impairment of performance by lower class children. Strain, Unikel, and Adams (in press) found a decrement in exploratory behavior for lower-class males but not for lower-class females. Results such as these question the applicability of a general concept of cultural disadvantage as a function of lower socioeconomic status.

This experiment also employed a different learning task than those used by the previous investigators. Although the specification of the exact dimensions upon which the various tasks differ remains a matter for further analysis, the task employed in this study and the aforementioned study by Noonan and Barry (1967) appears to be simpler and less demanding than those used in the earlier studies. It may be hypothesized that children become more responsive to tangible reward as the degree of inconsistency which exists between the task they are performing and their level of capability increases. Assuming lower socioeconomic class conditions lead to impairment when compared with middle-class conditions, a simple task would be more inconsistent with the abilities of middle-class Ss and a relatively complex task would be more inconsistent for lower-class Ss. Thus, the middle-class Ss of Noonan and Barry would have been expected to respond to tangible reward on the relatively simple task employed while those performing the more complex tasks of Terrell et al (1959) and Zigler and de Labry

(1962) would not, and the lower-class Ss in the latter two experiments should have responded more to tangible reward than those in this experiment which involved a simpler task. The obtained results are in agreement with such expectations.

Certainly further research is necessary to clarify the matters discussed here. The determination of the specific behaviors which are affected by lower socioeconomic status remains elusive.

References

Noonan, J.R., and Barry, J.R. Differential effects of incentives among the retarded. Journal of Educational Research, 1967, 61, 108-111.

Office of Economic Opportunity. Dimensions of poverty in 1964. (Dec., 1965 rev.) Washington: OEO, 1965.

Peterson, G.L. The effects of social class on response to social reinforcement. Unpublished master's thesis, Louisiana State University, 1967.

Strain, G.S., Unikel, I.P., and Adams, H.E. Alternation behavior by children from lower socio-economic status groups. Developmental Psychology, in press.

Terrell, G., Durkin, K., and Wiesley, M. Social class and the nature of the incentive in discrimination learning. Journal of Abnormal and Social Psychology, 1959, 59 270-272.

Zigler, E., and de Labry, J. Concept-switching in middle-class, lower-class, and retarded children. Journal of Abnormal and Social Psychology, 1962, 65, 267-273.

Table 1

Analysis of Variance of Adjusted

Percentages of Correct Responses

Source	df	MS	F
Between Ss	143		
Reward (A)	2	5892.32	6.66**
Sex of E (B)	1	3656.30	4.13*
Sex of S (C)	1	908.42	1.03
A X B	2	1178.38	1.33
A X C	2	125.67	
B X C	1	292.00	
A X B X C	2	323.13	
Error	132	884.21	
Within Ss	288		
Treatments (D)	2	10632.63	31.40***
A X D	4	1663.06	4.91**
B X D	2	981.92	2.90
C X D	2	235.95	
A X B X D	4	325.27	
A X C X D	4	88.43	
B X C X D	2	78.99	
A X B X C X D	4	158.71	
Error	264	338.66	

*$p < .05$

**$p < .01$

***$p < .001$

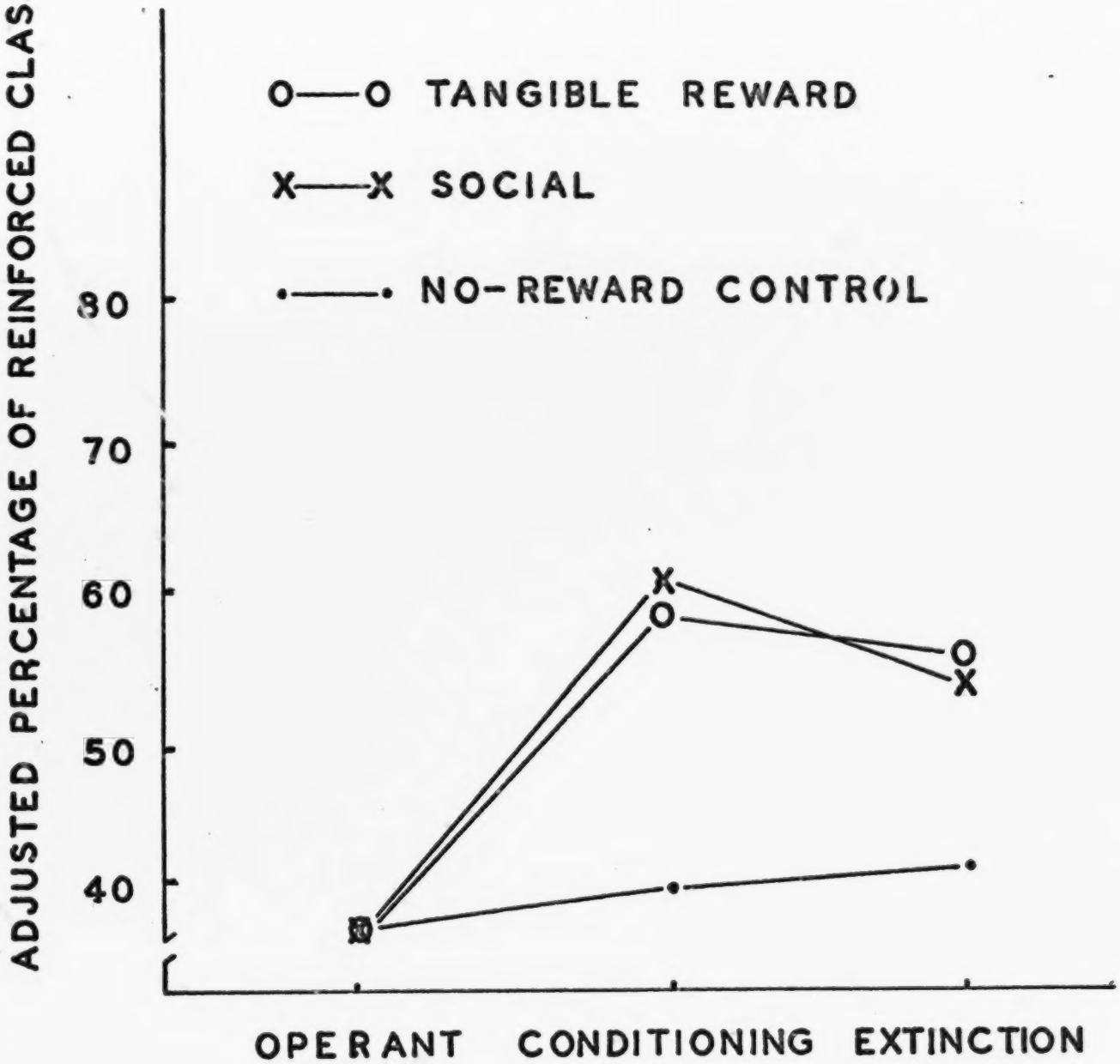

Fig. 1. Adjusted mean percentages of correct responses as a function of reward and treatments.